奇美電子
CHIMEI *INNOLUX*

PRODUCT SPECIFICATION

Doc. Number : MT170EN01 V.F

☐ Tentative Specification
☐ Preliminary Specification
☑ Final Specification

MODEL NO.:MT170EN01
SUFFIX: V.F

Customer:

APPROVED BY   SIGNATURE

Name / Title _____   _____

Note

Please return 1 copy for your confirmation with your
signature and comments.

Approved By   Checked By.   Prepared By

CONTENTS

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! *www.panelook.com*

PRODUCT SPECIFICATION

REVISION HISTORY

Version	Date	Page	Description
1.0	2010/08/17	All	First edition to all Spec.

PRODUCT SPECIFICATION

1. GENERAL DESCRIPTION

1.1 OVERVIEW

MT170EN01 V.F is a 17" TFT Liquid Crystal Display module with WLED Backlight unit and 30 pins 2ch-LVDS interface. This module supports 1280 x 1024 SXGA mode and can display up to 16.7M colors. The converter module for Backlight is not built in.

1.2 GENERAL SPECIFICATIONS

Item	Specification	Unit	Note
Screen Size	17 inches diagonal		
Driver Element	a-si TFT active matrix	-	-
Pixel Number	1280(H) X 1024(V), SXGA resolution	pixel	-
Pixel Pitch	0.264 (H) x 0.264 (V)	mm	-
Pixel Arrangement	RGB vertical stripe	-	-
Display Colors	16.7M (6 bit with Hi-FRC)	color	-
Transmissive Mode	Normally white	-	-
Surface Treatment	Anti-Glare, Haze=25%, Hard coating (3H)	-	-
Luminance, White	250nits （Typ.）	Cd/m2	
Power Consumption	Total 10.4 W (Max.) @ cell 3.5 W (Max.), BL 6.9 W (Max.)		(1)

Note (1) The specified power consumption : Total= cell (reference 4.3.1)+BL (reference 4.3.3)

2. MECHANICAL SPECIFICATIONS

Item		Min.	Typ.	Max.	Unit	Note
Module Size	Horizontal (H)	358.0	358.5	359.0	mm	(1)
	Vertical (V)	296.0	296.5	297.0	mm	
	Thickness (T)	-	10.5	11.0	mm	
Bezel Area	Horizontal	341.7	341.9	342.1	mm	
	Vertical	274.2	274.4	274.6	mm	
Active Area	Horizontal	-	337.92	-	mm	
	Vertical	-	270.336	-	mm	
Weight		-	1500	1600	g	

Note (1)   Please refer to the attached drawings for more information of front and back outline dimensions.

3. ABSOLUTE MAXIMUM RATINGS

3.1 ABSOLUTE RATINGS OF ENVIRONMENT

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Storage Temperature	TST	-20	60	ºC	(1)
Operating Ambient Temperature	TOP	0	50	ºC	(1), (2)

Note (1)
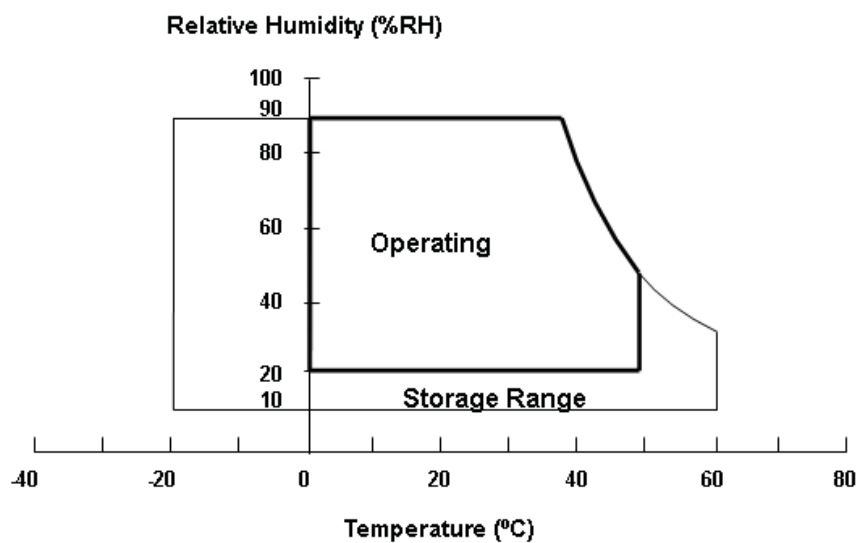
(a) 90 %RH Max. (Ta <= 40 ºC).

(b) Wet-bulb temperature should be 39 ºC Max. (Ta > 40 ºC).

(c) No condensation.

PRODUCT SPECIFICATION

Note (2) The temperature of panel surface should be 0 ºC min. and 60 ºC max.

3.2 ELECTRICAL ABSOLUTE RATINGS

3.2.1 TFT LCD MODULE

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Power Supply Voltage	VCCS	-0.3	6.0	V	(1)
Logic Input Voltage	V_{IN}	-0.3	3.6	V	

Note (1) Permanent damage to the device may occur if maximum values are exceeded. Function operation

should be restricted to the conditions described under Normal Operating Conditions.

PRODUCT SPECIFICATION

4. ELECTRICAL SPECIFICATIONS

4.1 FUNCTION BLOCK DIAGRAM

註解 [CMO6]: EE 填寫
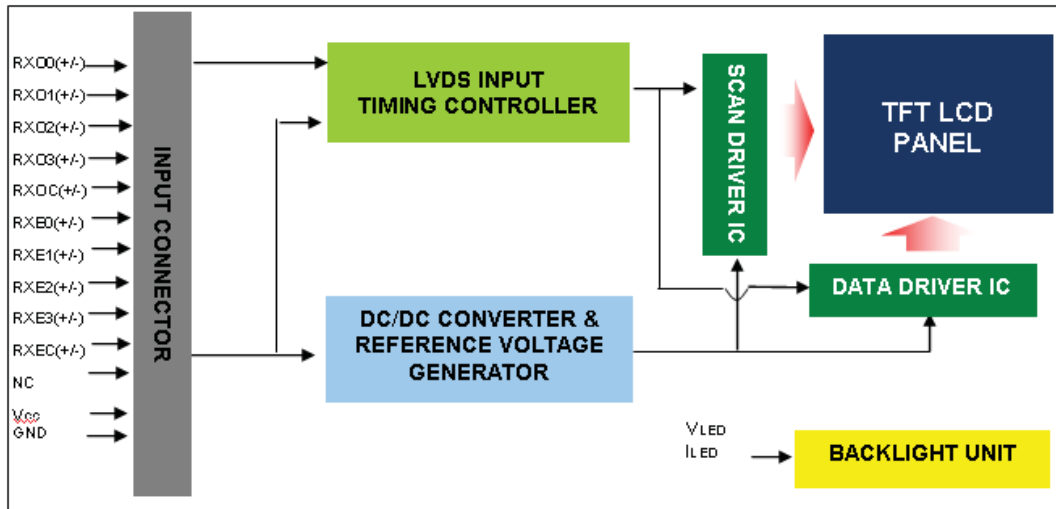
4.2. INTERFACE CONNECTIONS

PIN ASSIGNMENT

註解 [CMO7]: EE 填寫

Pin	Name	Description
1	RXO0-	Negative LVDS differential data input. Channel O0 (odd)
2	RXO0+	Positive LVDS differential data input. Channel O0 (odd)
3	RXO1-	Negative LVDS differential data input. Channel O1 (odd)
4	RXO1+	Positive LVDS differential data input. Channel O1 (odd)
5	RXO2-	Negative LVDS differential data input. Channel O2 (odd)
6	RXO2+	Positive LVDS differential data input. Channel O2 (odd)
7	GND	Ground
8	RXOC-	Negative LVDS differential clock input. (odd)
9	RXOC+	Positive LVDS differential clock input. (odd)
10	RXO3-	Negative LVDS differential data input. Channel O3(odd)
11	RXO3+	Positive LVDS differential data input. Channel O3 (odd)
12	RXE0-	Negative LVDS differential data input. Channel E0 (even)
13	RXE0+	Positive LVDS differential data input. Channel E0 (even)
14	GND	Ground
15	RXE1-	Negative LVDS differential data input. Channel E1 (even)
16	RXE1+	Positive LVDS differential data input. Channel E1 (even)
17	GND	Ground
18	RXE2-	Negative LVDS differential data input. Channel E2 (even)
19	RXE2+	Positive LVDS differential data input. Channel E2 (even)
20	RXEC-	Negative LVDS differential clock input. (even)
21	RXEC+	Positive LVDS differential clock input. (even)
22	RXE3-	Negative LVDS differential data input. Channel E3 (even)
23	RXE3+	Positive LVDS differential data input. Channel E3 (even)
24	GND	Ground
25	NC	For LCD internal use only, Do not connect

| 26	NC	For LCD internal use only, Do not connect
27	NC	For LCD internal use only, Do not connect
28	Vcc	+5.0V power supply
29	Vcc	+5.0V power supply
30	Vcc	+5.0V power supply

Note (1) Connector Part No.:

　　　093G30-B0001A(STARCONN) or MSAKT2407P30HA(STM) or equivalent

註解 [CMO8]: ME 填寫

Note (3) The first pixel is odd.

Note (4) Input signal of even and odd clock should be the same timing.

註解 [CMO9]: EE 填寫

PRODUCT SPECIFICATION

CHIMEI INNOLUX
奇美電子
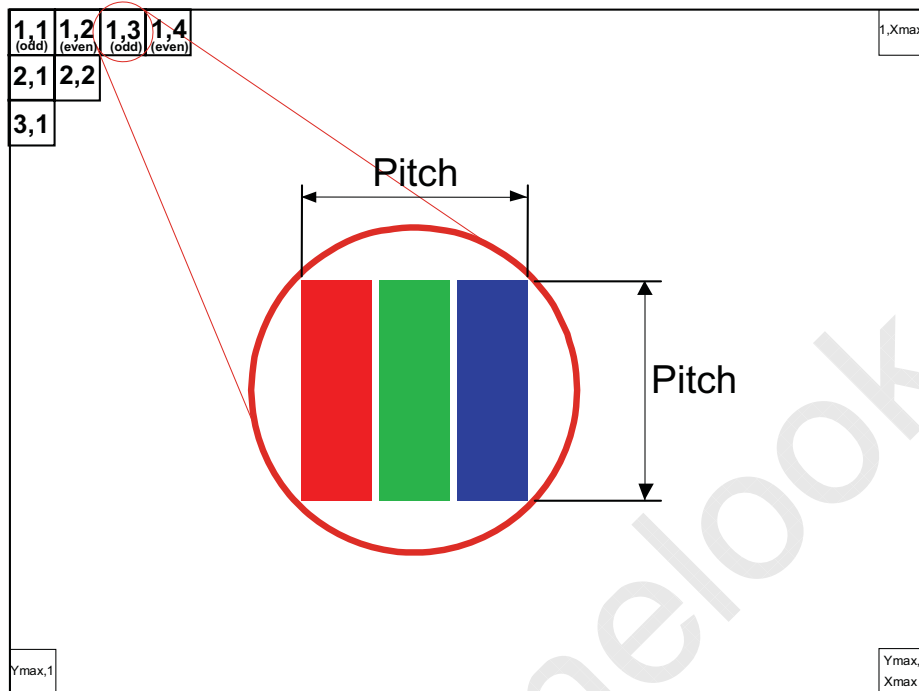
4.3 ELECTRICAL CHARACTERISTICS

4.3.1 LCD ELETRONICS SPECIFICATION

註解 [CMO10]: EE 填寫

Parameter		Symbol	Value			Unit	Note
			Min.	Typ.	Max.		
Power Supply Voltage		Vcc	4.5	5	5.5	V	-
Ripple Voltage		V_{RP}	-	-	300	mV	-
Rush Current		I_{RUSH}	-	-	3	A	(2)
Power Supply Current	White		-	350	500	A	(3)a
	Black		-	700	840	A	(3)b
	Vertical Stripe		-	700	840	A	(3)c
Power Consumption		PLCD				Watt	(4)
LVDS differential input voltage		Vid	100	-	600	mV	
LVDS common input voltage		Vic	--	1.2	--	V	
Logic High Input Voltage		VIH	--	--	100	V	
Logic Low Input Voltage		VIL	-100	--	--	V	

Note (1) The ambient temperature is Ta = 25 ± 2 ºC.

Note (2) Measurement Conditions:
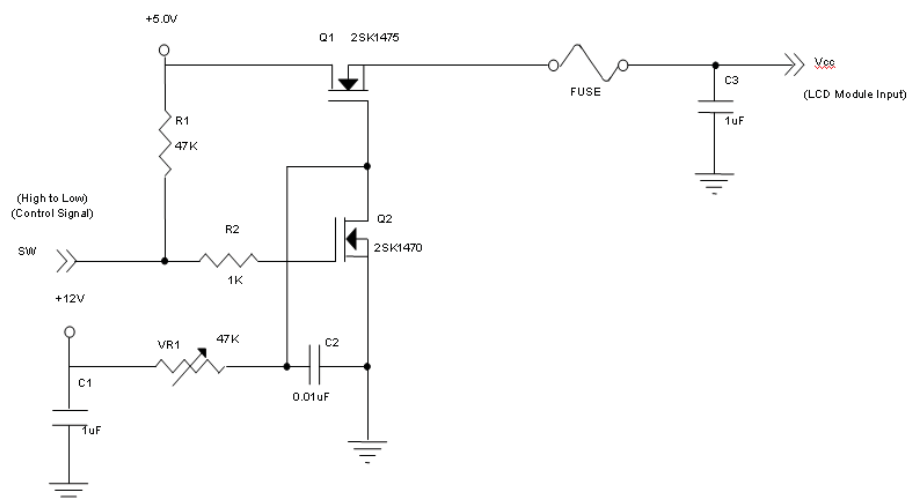
Vcc rising time is 470μs
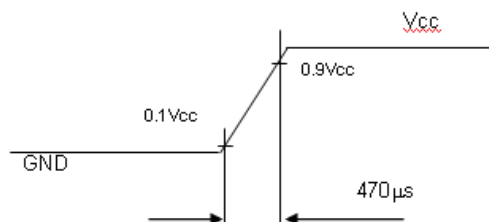
Note (3) The specified power supply current is under the conditions at Vcc = 5.0 V, Ta = 25 ± 2 ºC, Fr = 60Hz, whereas a power dissipation check pattern below is displayed.

a. White Pattern

b. Black Pattern
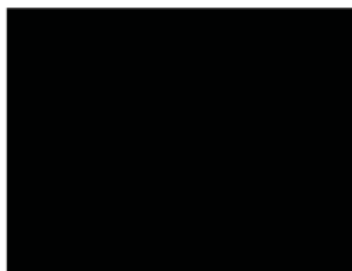
Active Area

Active Area

c. Vertical Stripe Pattern

Active Area

Note (4) The power consumption is specified at the pattern with the maximum current.

Note (5) VID waveform condition

Single-End

LVDS VᵢN N

LVDS VᵢN P

V_{id}

V_{ic}

GND

Differential Signal

0V

V_{id}

V_{id}

PRODUCT SPECIFICATION

4.3.2 Vcc Power Dip Condition
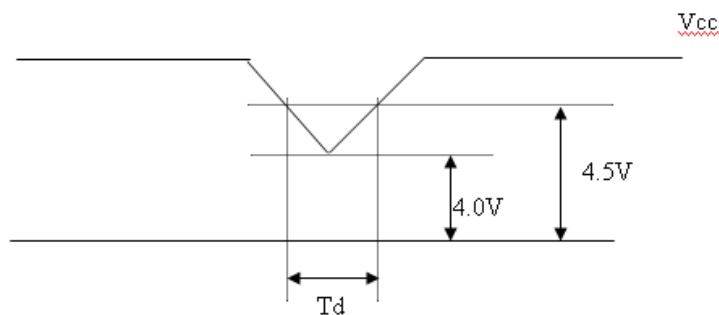
4.3.3 BACKLIGHT UNIT (LED matrix is 12S6P)

註解 [CMO11]: OPT 填寫

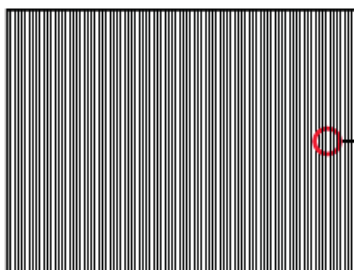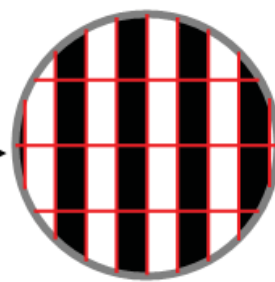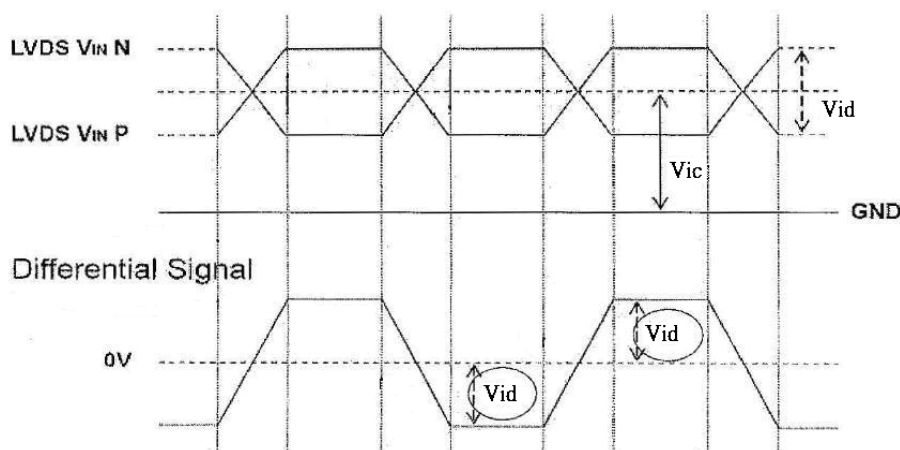| Parameter	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
LED Light Bar Input Voltage Per Input Pin	VPIN	---	38.1	41.7	V	(1), Duty=100%, IPIN=25mA
LED Light Bar Current Per Input Pin	IPIN	---	25	27.5	mA	(1), (2) Duty=100%
LED Life Time	LLED	30000			Hrs	(3)
Power Consumption	PBL	---	5.715	6.88	W	(1) Duty=100%, IPIN=25mA

Note (1) LED light bar input voltage and current are measured by utilizing a true RMS multimeter as shown below:

Note (2) PBL = IPIN × VPIN × (6) input pins , LED light bar circuit is (12)Series, (6)Parallel.

Note (3) The lifetime of LED is defined as the time when LED packages continue to operate under the conditions at Ta = 25 ±2 ℃ and I= (25)mA (per chip) until the brightness becomes $\leqq$ 50% of its original value.

奇美電子
CHIMEI INNOLUX

PRODUCT SPECIFICATION
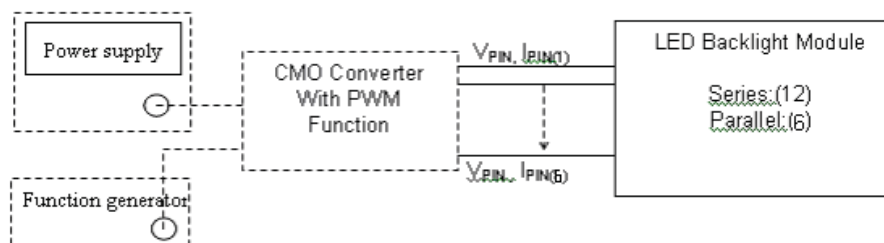
4.3.4 LIGHTBAR Connector Pin Assignment

註解 [CMO12]: EE 填寫

Connector: 7083K-F10N-01L , (Entery) /TF04-103A(FCN) Compatible

CN1

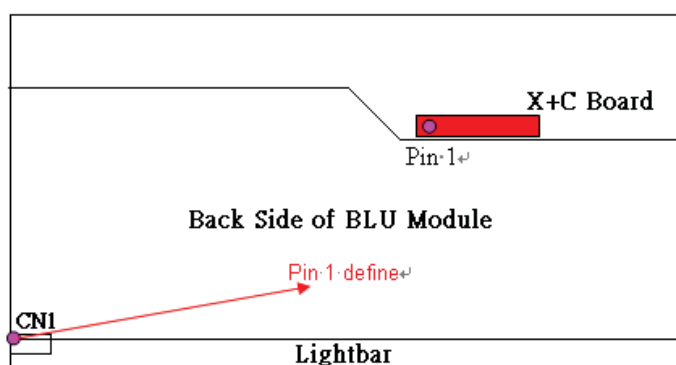| Pin number	Description
1	Cathode of LED string
2	Cathode of LED string
3	Cathode of LED string
4	Not connection, this pin should be open
5	VLED
6	VLED
7	Not connection, this pin should be open
8	Cathode of LED string
9	Cathode of LED string
10	Cathode of LED string

4.4 LVDS INPUT SIGNAL SPECIFICATIONS

4.4.1 LVDS DATA MAPPING TABLE

註解 [CMO13]: EE 填寫

LVDS Channel O0	LVDS output	D7	D6	D4	D3	D2	D1	D0
	Data order	OG0	OR5	OR4	OR3	OR2	OR1	OR0
LVDS Channel O1	LVDS output	D18	D15	D14	D13	D12	D9	D8
	Data order	OB1	OB0	OG5	OG4	OG3	OG2	OG1
LVDS Channel O2	LVDS output	D26	D25	D24	D22	D21	D20	D19
	Data order	DE	NA	NA	OB5	OB4	OB3	OB2
LVDS Channel O3	LVDS output	D23	D17	D16	D11	D10	D5	D27
	Data order	NA	OB7	OB6	OG7	OG6	OR7	OR6
LVDS Channel E0	LVDS output	D7	D6	D4	D3	D2	D1	D0
	Data order	EG0	ER5	ER4	ER3	ER2	ER1	ER0
LVDS Channel E1	LVDS output	D18	D15	D14	D13	D12	D9	D8
	Data order	EB1	EB0	EG5	EG4	EG3	EG2	EG1
LVDS Channel E2	LVDS output	D26	D25	D24	D22	D21	D20	D19
	Data order	DE	NA	NA	EB5	EB4	EB3	EB2
LVDS Channel E3	LVDS output	D23	D17	D16	D11	D10	D5	D27
	Data order	NA	EB7	EB6	EG7	EG6	ER7	ER6

PRODUCT SPECIFICATION

奇美電子
CHIMEI INNOLUX

4.4.2 COLOR DATA INPUT ASSIGNMENT

The brightness of each primary color (red, green and blue) is based on the 8-bit gray scale data input for the color. The higher the binary input, the brighter the color. The table below provides the assignment of color versus data input.

Color		Data Signal																								
		Red								Green								Blue							
		R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0
Basic Colors	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Green	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Cyan	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Magenta	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Yellow	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gray Scale Of Red	Red(0) / Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(1)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(2)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Red(253)	1	1	1	1	1	1	0	1	0	0	0	:0	0	0	0	0	0	0	0	0	0	0	0	:0
	Red(254)	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(255)	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gray Scale Of Green	Green(0) / Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Green(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	Green(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Green(253)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0
	Green(254)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
	Green(255)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Gray Scale Of Blue	Blue(0) / Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Blue(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Blue(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Blue(253)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1
	Blue(254)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0
	Blue(255)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

Note (1) 0: Low Level Voltage, 1: High Level Voltage

奇美電子
CHIMEI **INNOLUX**

PRODUCT SPECIFICATION

4.5 DISPLAY TIMING SPECIFICATIONS

註解 [CMO15]: EE 填寫

The input signal timing specifications are shown as the following table and timing diagram.

| Signal	Item	Symbol	Min.	Typ.	Max.	Unit	Note
LVDS Clock	Frequency	Fc	45	54	69.3	MHz	-
	Period	Tc	14.43	18.52	22.22	ns	
	Input cycle to cycle jitter	T_{rcl}	-0.02*TC	---	0.02*TC	ns	(1)
	Input Clock to data skew	TLVCCS	-0.02*TC	---	0.02*TC	ns	(2)
	Spread spectrum modulation range	Fclkin_mod	0.97*FC	---	1.03*FC	MHz	(3)
	Spread spectrum modulation frequency	F_{SSM}	---	---	200	KHz	
Vertical Display Term	Frame Rate	Fr	50	60	75	Hz	Tv=Tvd+Tvb
	Total	Tv	1044	1066	1100	Th	-
	Active Display	Tvd	—	1024	—	Th	-
	Blank	Tvb	20	42	--	Th	-
Horizontal Display Term	Total	Th	790	844	880	Tc	Th=Thd+Thb
	Active Display	Thd	—	640	—	Tc	-
	Blank	Thb	150	204	---	Tc	-

Note: Because this module is operated by DE only mode, Hsync and Vsync input signals are ignored.
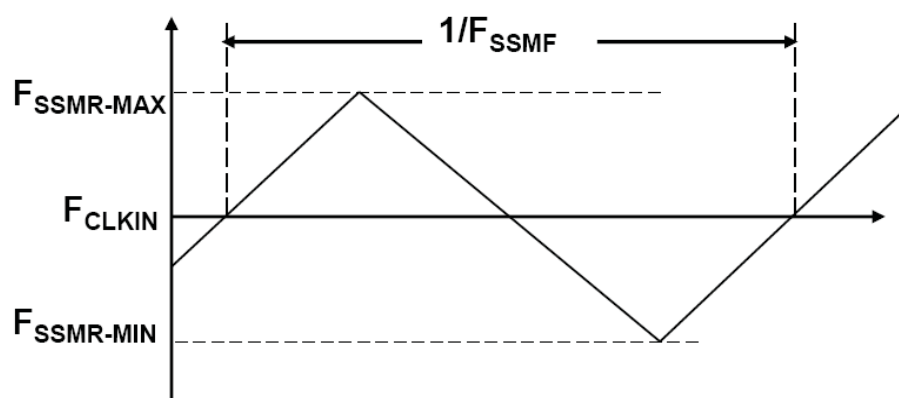
INPUT SIGNAL TIMING DIAGRAM
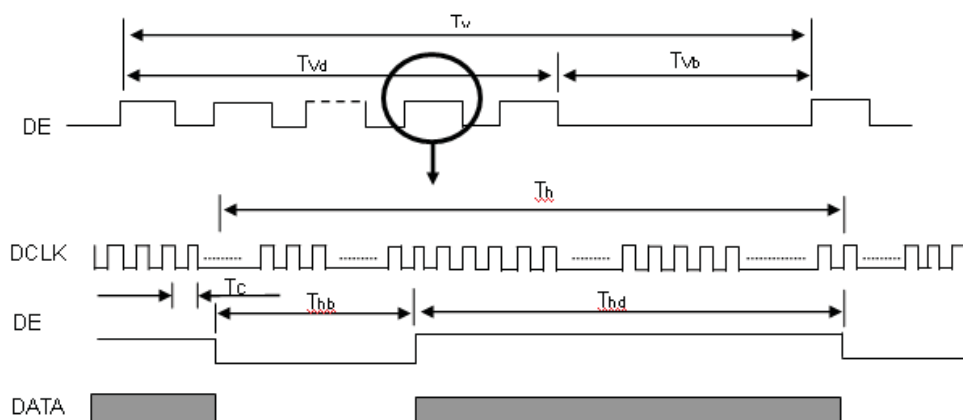
Note (1) The input clock cycle-to-cycle jitter is defined as below figures. Trcl = I T$_1$ – TI
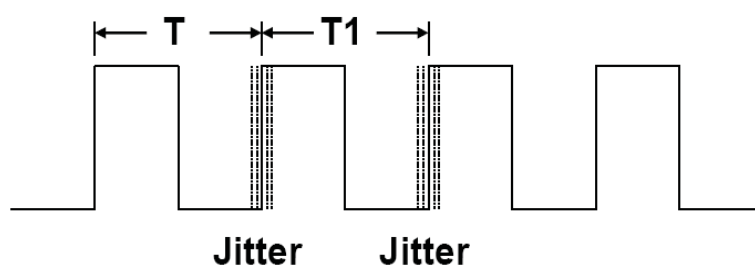
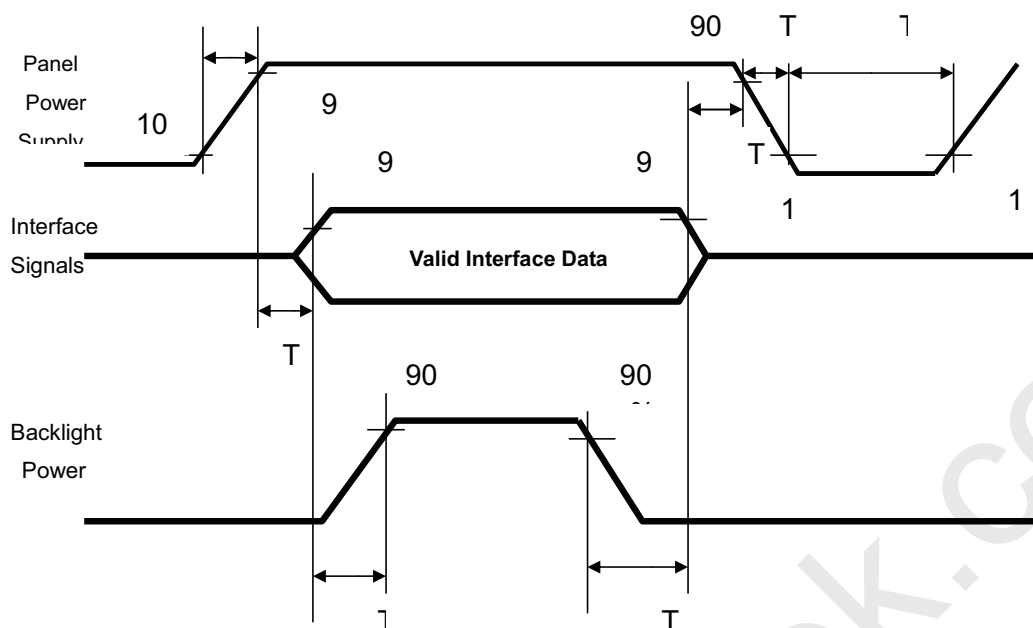Note (2) Input Clock to data skew is defined as below figures.
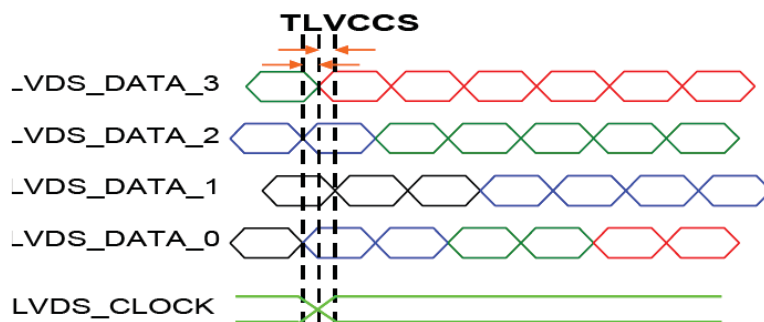
Note (3) The SSCG (Spread spectrum clock generator) is defined as below figures.

奇美電子
CHIMEI INNOLUX

PRODUCT SPECIFICATION

4.6 POWER ON/OFF SEQUENCE

註解 [CMO16]: EE 填寫

The power sequence specifications are shown as the following table and diagram.

Timing Specifications:

Parameters	Values			Units
	Min	Typ.	Max	
T1	0.1	-	10	ms
T2	0	30	50	ms
T3	200	250	-	ms
T4	100	250	-	ms
T5	0	20	50	ms
T6	0.1	-	50	ms
T7	1000	-	-	ms

Note (1) The supply voltage of the external system for the module input should be the same as the definition of Vcc.

Note (2) When the backlight turns on before the LCD operation of the LCD turns off, the display may momentarily become abnormal screen.

Note (3) In case of VCC = off level, please keep the level of input signals on the low or keep a high impedance.

Note (4) T4 should be measured after the module has been fully discharged between power off and on period.

Note (5) Interface signal shall not be kept at high impedance when the power is on.

Note (6) CMO won't take any responsibility for the products which are damaged by the customers not following the Power Sequence.

PRODUCT SPECIFICATION

Note (7) There might be slight electronic noise when LCD is turned off (even backlight unit is also off). To

avoid this symptom, we suggest "Vcc falling timing" to follow "t6 spec".

5. OPTICAL CHARACTERISTICS

5.1 TEST CONDITIONS

Item	Symbol	Value	Unit
Ambient Temperature	Ta	25±2	^{o}C
Ambient Humidity	Ha	50±10	%RH
Supply Voltage	V_{CC}	12	V
Input Signal	According to typical value in "3. ELECTRICAL CHARACTERISTICS"		
LED Light Bar Input Current Per Input Pin	I_{PIN}	25	mA_{DC}
PWM Duty Ratio	D	100	%
LED Light Bar Test Converter	TEST01001T2-A1		

5.2 OPTICAL SPECIFICATIONS

The relative measurement methods of optical characteristics are shown in 5.2. The following items should be

measured under the test conditions described in 5.1 and stable environment shown in Note (5).

Item		Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Color Chromaticity (CIE)	Red	Rx	θ = 0°	-0.03	0.636	+0.03	-	(1), (5)
		Ry			0.343			
	Green	Gx			0.305			
		Gy			0.619			
	Blue	Bx			0.157			
		By			0.061			
	White	Wx			0.313			
		Wy			0.329			
Center Luminance of White (Center of Screen)		L_C		200	250	-	cd/m^2	(4), (5)
Contrast Ratio		CR		700	1000	-	-	(2), (5)
Response Time		T_R	θ = 0°	-	1	4	ms	(3)
		T_F		-	4	6		
White Variation		δW		1	1.33	1.43	-	(5), (6)
Viewing Angle	Horizontal	θx- + θx+	CR ≧ 10	150	170	-	Deg.	(1), (5)
	Vertical	θy- + θy+		140	160	-		
Viewing Angle	Horizontal	θx- + θx+	CR ≧ 5	160	178	---	Deg.	(1), (5)
	Vertical	θy- + θy+		150	170	---		

Note (1) Definition of Viewing Angle (θx, θy):
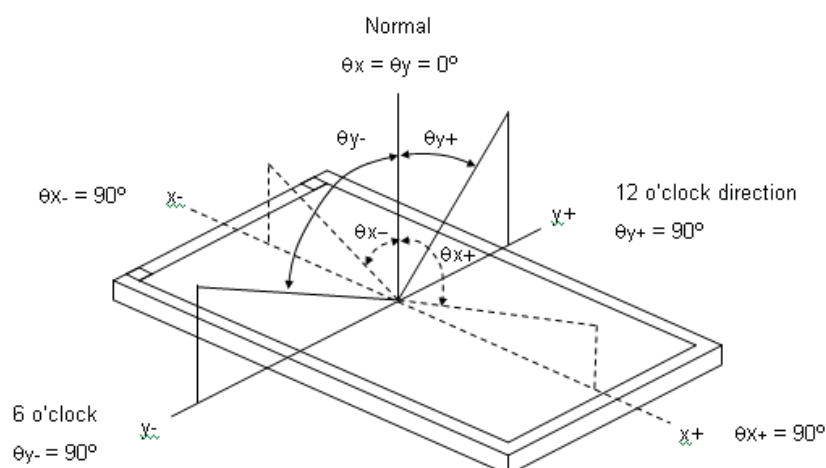
Note (2) Definition of Contrast Ratio (CR):

The contrast ratio can be calculated by the following expression.

Contrast Ratio (CR) = L255 / L0

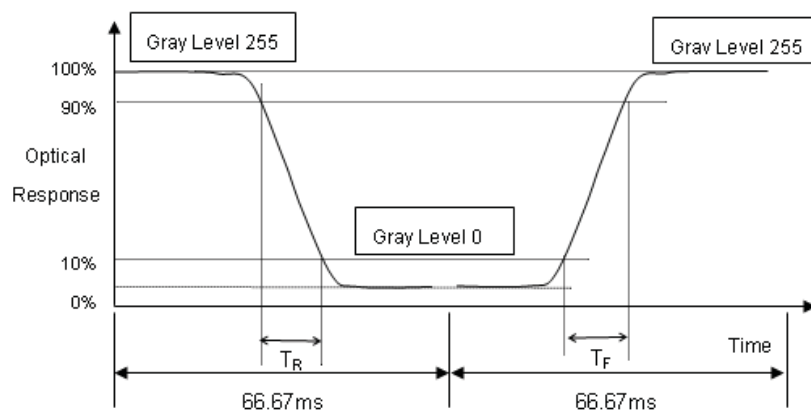L255: Luminance of gray level 255

L 0: Luminance of gray level 0

CR = CR (5)

CR (X) is corresponding to the Contrast Ratio of the point X at Figure in Note (6).

Note (3) Definition of Response Time (T_R, T_F):

Note (4) Definition of Luminance of White (L_C):

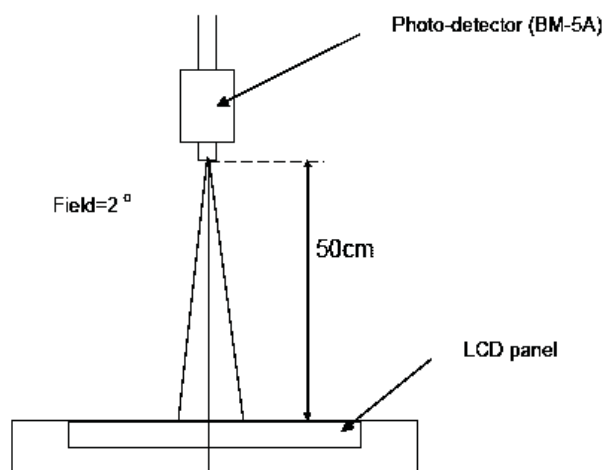   Measure the luminance of gray level 255 at center point

    $L_C = L$ (5)

    L (x) is corresponding to the luminance of the point X at Figure in Note (6).

Note (5) Measurement Setup:

    The LCD module should be stabilized at given temperature for10minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 10 minutes in a windless room.

Note (6) Definition of White Variation (δW):

    Measure the luminance of gray level 255 at 9 points

    $\delta W =$ Maximum [L (1) ~ L (9)] / Minimum [L (1) ~ L (9)]

Version 0.0   23 August 2010   **19 / 29**   The

PRODUCT SPECIFICATION
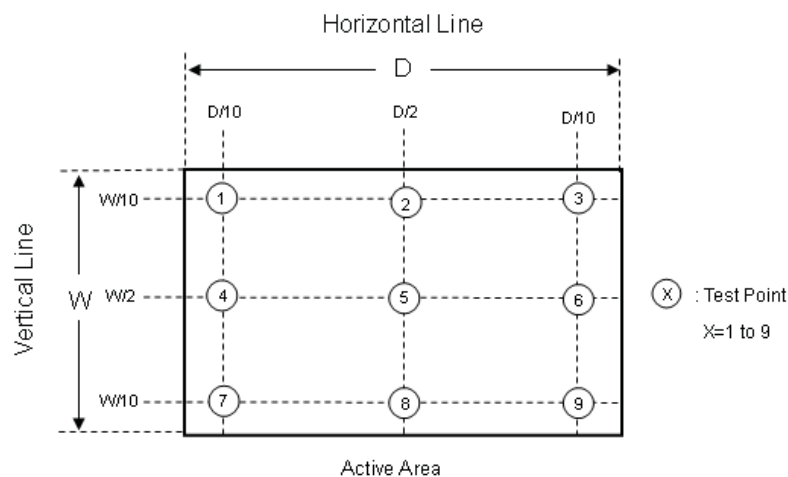
6. RELIABILITY TEST ITEM

註解 [CMO18]: RA 填寫

Items	Required Condition	Note
Temperature Humidity Bias (THB)	Ta= 50℃ , 80%RH, 240hours	
High Temperature Operation (HTO)	Ta= 50℃ , 240hours	
Low Temperature Operation (LTO)	Ta= 0℃ , 240hours	
High Temperature Storage (HTS)	Ta= 60℃ , 240hours	
Low Temperature Storage (LTS)	Ta= -20℃ , 240hours	
Vibration Test (Non-operation)	Acceleration: 1.5 Grms Wave: Half-sine Frequency: 10 - 300 Hz Sweep: 30 Minutes each Axis (X, Y, Z)	
Shock Test (Non-operation)	Acceleration: 50 G Wave: Half-sine Active Time: 11 ms Direction : ± X, ± Y, ± Z.(one time for each Axis)	
Thermal Shock Test (TST)	-20℃/30min , 60℃ / 30min , 100 cycles	
On/Off Test	25℃ ,On/10sec , Off /10sec , 30,000 cycles	
ESD (Electro Static Discharge)	Contact Discharge: ± 8KV, 150pF(330Ω)	
	Air Discharge: ± 15KV, 150pF(330Ω)	
Altitude Test	Operation:10,000 ft / 24hours Non-Operation:30,000 ft / 24hours	

Note (1) criteria : Normal display image with no obvious non-uniformity and no line defect.

Note (2) Evaluation should be tested after storage at room temperature for more than two hour

Note (3) At testing Vibration and Shock, the fixture in holding the module has to be hard and rigid enough so

that the module would not be twisted or bent by the fixture.

The fixing condition is shown as below:

PRODUCT SPECIFICATION
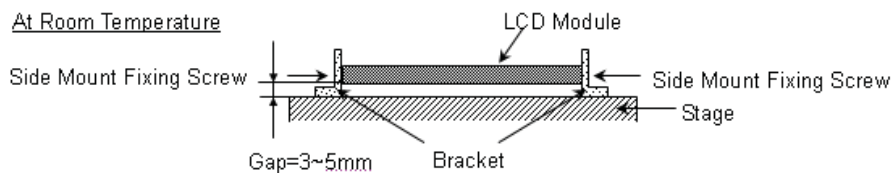
7. PACKING

7.1 PACKING SPECIFICATIONS

(1) 7 LCD modules / 1 Box

(2) Box dimensions:448(L) X 322 (W) X 390(H) mm

(3) Weight: approximately: 12kg (7 modules per box)

7.2 PACKING METHOD

(1) Carton Packing should have no failure in the following reliability test items.

Test Item	Test Conditions	Note
Vibration	ISTA STANDARD 1 . 5G, 1 0 t o 5 00 Hz , random ,30 mins for each axis X/Y/Z	Non Operation
Dropping Test	1 Corner , 3 Edge, 6 Face, 60cm	Non Operation

Figure. 7-1 Packing method

PRODUCT SPECIFICATION
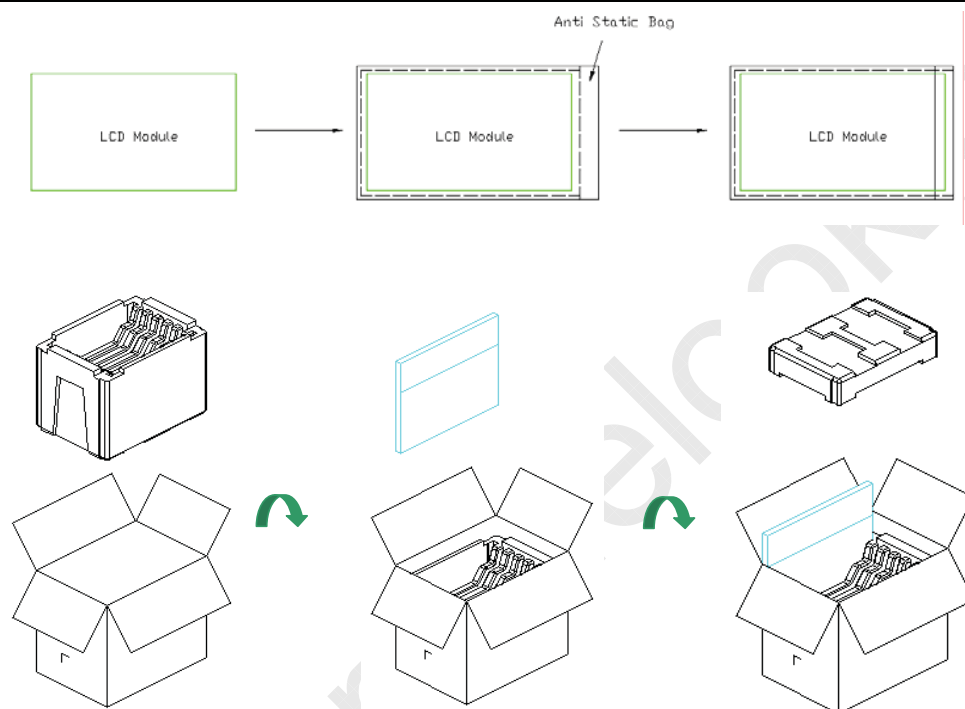
7.3 PALLET

For Sea/Land Transportation(20ft/40ft Container)

Figure. 7-1 Packing method

PRODUCT SPECIFICATION
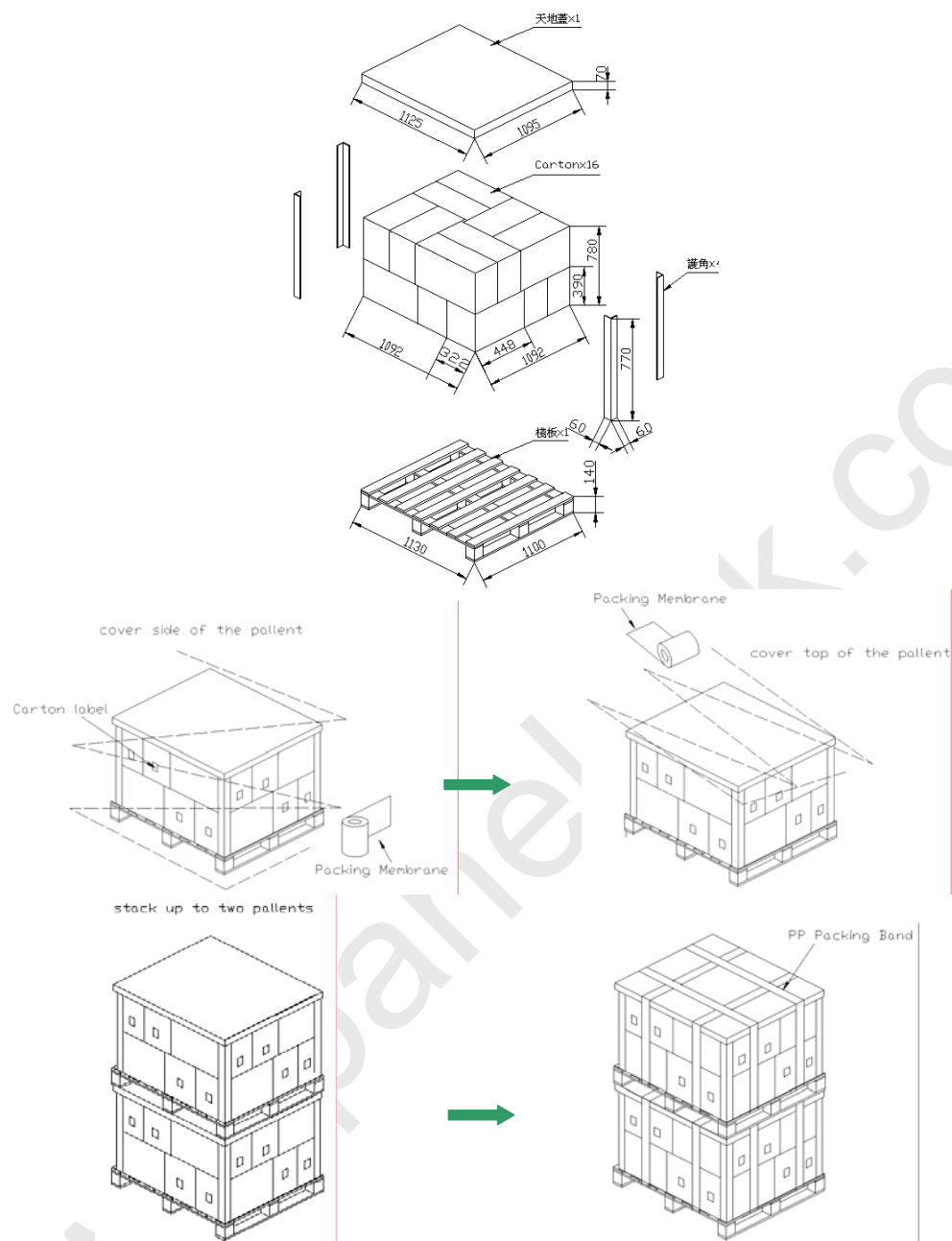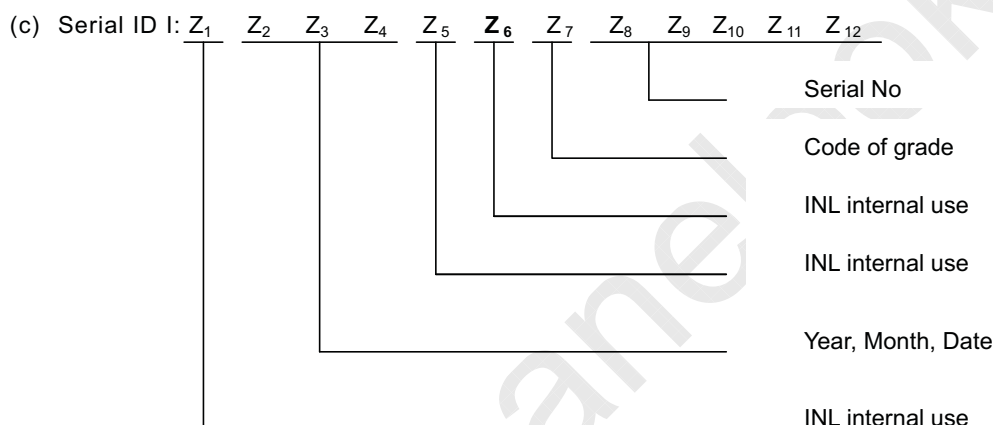
8. CMI MODULE LABEL

The barcode nameplate is pasted on each module as illustration, and its definitions are as following explanation.

(1) Module Label

(a) Model Number: MT170EN01

(b) Version: V.F

(c) Serial ID I: Z_1 Z_2 Z_3 Z_4 Z_5 $\mathbf{Z_6}$ Z_7 Z_8 Z_9 Z_{10} Z_{11} Z_{12}

Serial No

Code of grade

INL internal use

INL internal use

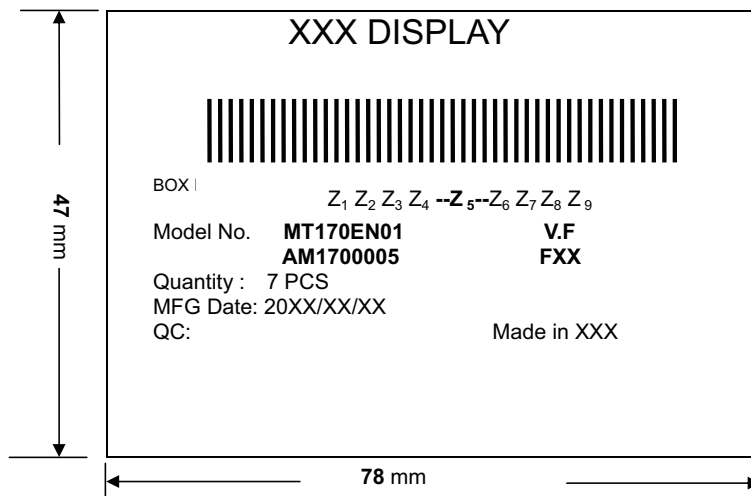Year, Month, Date

INL internal use

Serial ID includes the information as below:

1.   Manufactured Date: Year: 0~9, for 2010~2019

2.   Month: 1~9 & A~C for Jan.~Dec.

3.   Date: 1~9 & A~Z (exclude I, O, Q, U) for 1st~31th

4.   Code of grade: 1, 2, 3, 5, E

5.   Serial No: Module manufacture sequence no
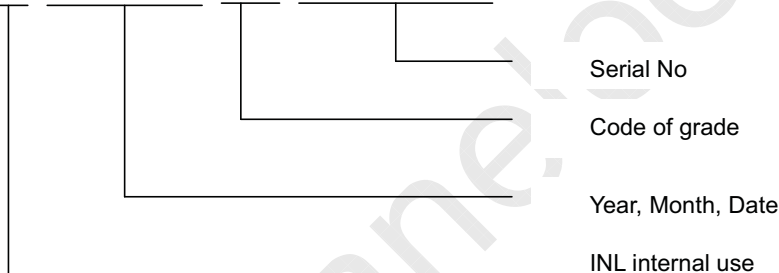
(d) Serial ID II (INL internal use)

PRODUCT SPECIFICATION

(2) Carton Label

```
XXX DISPLAY

||||||||||||||||||||||||||||||||||||||||||||||

BOX |
              Z_1 Z_2 Z_3 Z_4 --Z_5--Z_6 Z_7 Z_8 Z_9
Model No.    MT170EN01              V.F
             AM1700005             FXX
Quantity :   7 PCS
MFG Date: 20XX/XX/XX
QC:                       Made in XXX
```

47 mm

78 mm

(a) Model Number: MT170EN01

(b) Version: V.F

(c) Packing quantity:7 pcs

(d) Serial ID: Z_1 Z_2 Z_3 Z_4 Z_5 Z_6 Z_7 Z_8 Z_9

Serial No

Code of grade

Year, Month, Date

INL internal use

Serial ID includes the information as below:

(a) Manufactured Date: Year: 0~9, for 2010~2019

    Month: 1~9 & A~C for Jan.~Dec.

    Date: 1~9 & A~Z (exclude I, O, Q, U) for 1st~31th

(b) Code of grade: 1,2, 3, 5, E

(c) Serial No: Module packing sequence no

9. PRECAUTIONS

9.1 ASSEMBLY AND HANDLING PRECAUTIONS

(1) Do not apply rough force such as bending or twisting to the module during assembly.

(2) To assemble or install module into user's system can be only in clean working areas. The dust and oil may cause electrical short or worsen the polarizer.

(3) It's not permitted to have pressure or impulse on the module because the LCD panel and Backlight will be damaged.

(4) Always follow the correct power sequence when LCD module is connecting and operating. This can prevent damage to the CMOS LSI chips during latch-up.

(5) Do not pull the I/F connector in or out while the module is operating.

(6) Do not disassemble the module.

(7) Use a soft dry cloth without chemicals for cleaning, because the surface of polarizer is very soft and easily scratched.

(8) It is dangerous that moisture come into or contacted the LCD module, because moisture may damage LCD module when it is operating.

(9) High temperature or humidity may reduce the performance of module. Please store LCD module within the specified storage conditions.

(10) When ambient temperature is lower than 10ºC may reduce the display quality. For example, the response time will become slowly.

9.2 STORAGE PRECAUTIONS

(1) Do not leave the module in high temperature, and high humidity for a long time. It is highly recommended to store the module with temperature from 0℃ to 35℃ and relative humidity of less than 70%

(2) Do not store the TFT – LCD module in direct sunlight

(3) The module should be stored in dark place. It is prohibited to apply sunlight or fluorescent light in storing

9.3 OPERATION PRECAUTIONS

(1) The LCD product should be operated under normal condition.

Normal condition is defined as below :

Temperature : 20±15℃

Humidity: 65±20%

Display pattern : continually changing pattern(Not stationary)

(2) If the product will be used in extreme conditions such as high temperature, high humidity, high altitude ,display pattern or operation time etc…It is strongly recommended to contact CMO for application engineering advice . Otherwise , Its reliability and function may not be guaranteed.

9.4 SAFETY PRECAUTIONS

(1) If the liquid crystal material leaks from the panel, it should be kept away from the eyes or mouth. In case of contact with hands, skin or clothes, it has to be washed away thoroughly with soap.

(2) After the module's end of life, it is not harmful in case of normal operation and storage.

註解 [CMO21]: Safety, RA 等填寫

9.5 SAFETY STANDARDS

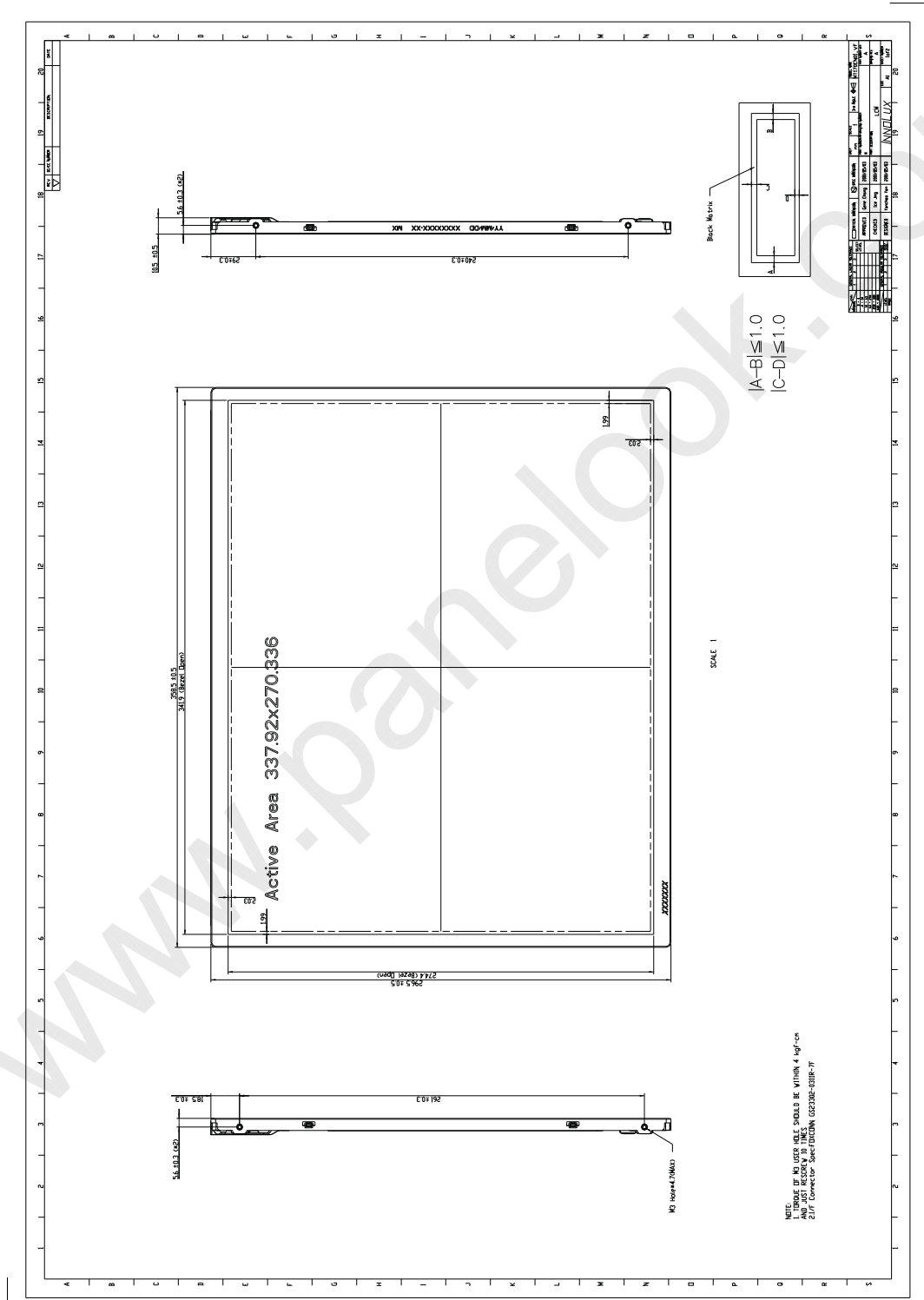The LCD module should be certified with safety regulations as follows:

(1) UL60950-1 or updated standard.

(2) IEC60950-1 or updated standard.

9.6 OTHER

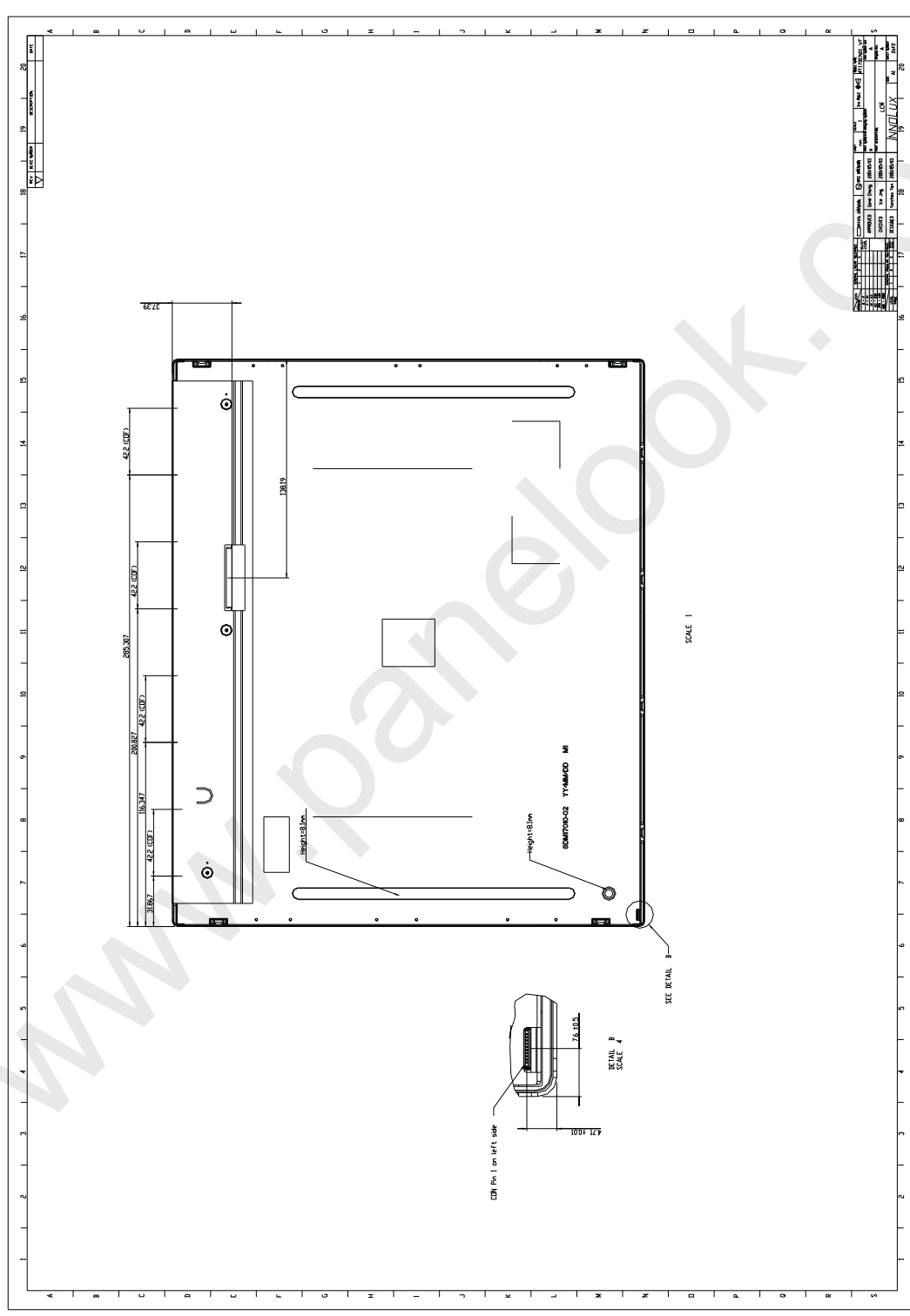When fixed patterns are displayed for a long time, remnant image is likely to occur.

Appendix. OUTLINE DRAWING

註解 [CMO22]: ME 提供

PRODUCT SPECIFICATION

Active Area 337.92x270.336

SCALE 1

|A-B|≦1.0
|C-D|≦1.0

NOTE:
1. TORQUE OF M3 USER HOLE SHOULD BE WITHIN 4 kgf·cm
AND JUST RESCREW 10 TIMES
2.I/F Connector Specification: G123300-031IR-7T

Version 0.0　23 August 2010　27 / 29　InnoLux. Any unauthorized use is prohibited.

The copyright belongs to CHIMEI

PRODUCT SPECIFICATION

奇美電子
CHIMEI *INNOLUX*

Version 0.0   23 August 2010   **28 / 29**